

Local Environmental Health Analysis as a Tool for Policy-making, Exemplified by “Transport, Environment and Health” in the City of Bielefeld

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Goal and Scope . The Public Health laws of several German states require local status analyses to be prepared on a regular basis. Topics of such reports include environmental health issues. The challenge is – with limited resources – to accurately analyze the current situation and to derive conclusions which will support (and possibly help to evaluate) local policy-making.

Methods . Based on the 1997 Public Health act of North-Rhine Westphalia (one of the German states, Länder), a project investigated the opportunities and limitations of local environmental health monitoring and surveillance and prepared a generic concept, which was then applied to transport-related impacts on health and environment in the city of Bielefeld (pop. 321,000). Methods include the spatial and temporal analysis of selected quantitative indicators concerning “pressures” originating from the local transport system, the state of the environment, human exposures to noise, pollutants, and hazardous physical energy, and health events / health status of the population. The World Health Organization’s DPSEEA model (Driving forces, Pressures, State, Exposures, Effects, Activities) was used to structure the whole analysis in a novel way. The spatial comparisons were supported by GIS applications.

Results and Conclusions . One of the report’s key features is to provide systematic, quantitative comparisons of the city of Bielefeld with 22 comparable other cities located in the same state. Taking the example of Diesel soot emissions, Bielefeld, with 121 metric tons, occupied rank no. 8 in 1994. Three years later, emissions were remarkably lower everywhere. The reduction of Diesel soot emission in Bielefeld over this 3-year period was 51%. This value represented rank no. 16 of the 23 cities, i.e. 15 cities were more successful in emission reduction (up to 67%) while 7 cities were less successful, with minimum reduction of only 31%. For some parameters (e.g. benzene, CO), concentrations in ambient air showed a decreasing trend in the first half of the 1990s, but this trend was reversed later on. Incidentally, traffic accidents involving children under the age of 15 showed a very similar time pattern. The report contains 10 specific recommendations concerning policy-making, and 8 additional ones on the further development of Environmental Health analyses. Examples of the former refer to the monitoring of food sold in gas stations, and to better consideration of combined exposures; examples of the latter refer to a better linkage of reporting activities with the city’s planning procedures, to the ongoing development of so-called “Strategic Information Systems”, and to the need for continuity of reporting efforts.

Recommendations and Outlook . An important lesson learnt refers to the DPSEEA structure model which was perceived as advantageous by the participating institutions. The model helped to integrate the different transport impacts on air, water, soil and food as well as subsequent exposures and potential health effects into a unified framework. Benchmarking information was identified as important input for priority-setting. The approach presented in this paper is universally applicable and should be useful for supporting policy-making in widely different administrative and political contexts. While the city’s existing programs such as *Local Agenda 21* and their respective indicator systems were taken into account for the current analysis, there is still room for closer coordination of related efforts. Also, there is a need to optimize the communication of the results to decision-makers and to the public at large, e.g. by improved visualization.